



Toilettes Publiques Nature

Ecosphère-Technologies
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HISTORICAL

The ECOSPHERE TECHNOLOGIES Company was created by Pierre COLOMBOT in September 1991.

From the start, Ecosphere Technologies set high standards for themselves, their goals being to develop original technologies and make big improvements on what was already on the market. This started with the analysis of devices already being sold at the time in Sweden and Norway to understand how they worked (biological, waterless toilets), to analyse their strengths (odour removal by air suction through the toilet bowl ; minimal light in the cabin to avoid visual nuisances) but also their limitations (the absence of a clear choice between drying devices and composting devices ; devices not very efficient in the humidification process (transformation of faecal matter into humus) because of "high volume processing" of the faecal matter.

From these analysis , Ecosphere Technologies progressively imagined two original technologies :

- ✓ The automatic bagging and drying Saniverte® : The drying of faecal matter and toilet paper by mass ventilation (inspired from the technique of drying hay in barns, developed in the Swiss Alps)
- ✓ The Earthworm Composting Saniverte® : transformation of faecal matter into compost with the help of earthworms (for locations lower than 2000m-2200m high)

After 15 years in the business and over 250 functioning public dry toilet installations, Ecospheres Technologies has today become a leader in its field.

SANIVERTE®

The Saniverte Dry toilets work without water and without chemical products, are autonomous, don't freeze over, and need very little maintenance. They are adaptable to locations where there are water distribution system and sanitary sewers restrictions.

The faecal matter, toilet paper and urine fall onto an inclined conveyor belt. The urine flows towards the bottom into a spreading drain. The belt carries the faecal matter away. The belt is put into action by the user, via a pedal (simple and rustic mechanical transmission).

Earthworm Composting Saniverte® :

Once the faecal matter and toilet paper reach the top of the conveyor belt, they fall into a storage zone in the earth. Earthworms are placed in that zone when the toilets are installed and these transform the solid matter into compost.

Frequently used public toilets generate about 1M3 of faecal matter and toilet paper per year, which in turn generates about 100 Litres of compost.

This compost needs to be emptied every 5 to 10 years and may possibly be spread in the vicinity of the toilet.



Saniverte - Hiking trails



Saniverte – Ski lifts

Automatic Bagging and Drying Saniverte®:

Once the faecal matter and toilet paper reach the top of the conveyor belt, they are removed by a scraper and fall into bags (4 bags to form the rotating system, each bag successively reaching the edge of the conveyor belt). The movement of the bags is synchronised with the movement of the conveyor belt in order to fill all the bags slowly and at the same rate.

The bags and their contents, made light and almost odourless by the drying process, can either be burned at the site, turned into compost by earthworms in compost bags situated near the toilets, or carried away.

Depending on how frequently the toilets are used the bags would need to be changed once or twice a year.



Saniverte in ski resorts



Refuge Vallot – Mont Blanc – Altitude: 4360m

THE COMPANY POLICY

Dry toilets : an idea which as time goes by, becomes more and more fascinating.

And also an idea with deep roots:

- The first "modern" Dry Toilets (not the ones in our grand-parents back garden!) appeared in Scandinavian countries a few years before the Second World War. These countries, have since remained pioneers in this field, so much so that there now exist towns in Sweden that impose the installation of domestic dry toilets in new homes in order to get building permit.
- But dry toilets are also a very ancient know-how. Hence, we set off for Mali (to MOPTI in the interior of the Niger river delta), and also in Yemen (in Sanaa and Adramahout) in order to study remarkable, traditional devices: dry toilets in towns (even in buildings over 10 meters high) based on the principle of urine and faecal matter separation, dry toilets that enable the elimination of nuisances such as odours and flies (despite the heat) and manage the sanitary risk (no dispersion of pathogenic germs), needing very little maintenance (once every 5 to 10 years)
- In this tradition, for us, dry toilets have become a permanent tension, an obsessive questioning, a demand never totally satisfied of efficiency in simplicity. But to 'make simple' is something very difficult. Improving the devices and making them more efficient, naturally leads to making them more complex. Hence, there exist dry toilets that derive to real unnecessary complicated systems. So after the work of complexification comes the work re-simplification, which aims to preserve all the acquired benefits while optimizing the way to create them. Quality comes at this price and quality is our driving force.
- Today, Ecosphere-Technologies is carrying out several research and development programmes, particularly with :
 - The adaptation of Earthworm Composting in the drier, southern regions of France and Spain and also the colder mountain zones.
 - The optimisation of wind effects on toilet ventilation with the help of models tested in blower houses.
 - The development of devices that avoid formation of solid chemicals made by pure urine, which may block the flow of urine.

- The development of domestic toilets, derived from our public toilets and based on the Earthworm Composting system.
- But dry toilets are not just technical. It's a way to belong, in a modest but real way, to a major questioning of how we interact with our environment. Not a masochistic questioning, guilty and based on deprivation, but a joyous, playful questioning. To not accept the evidences of the past (modern toilets necessarily have flushes!) is something very stimulating. To hold a small place in this challenge to invent a new society that is more respectful of the ecosystems surrounding us... gives us pleasure! And we think it is worth the effort!